**Africa RISING-Malawi farming systems and modelling workshop**

**Salima, Lake Malawi, July 29-August 1, 2013**

**Workshop background**

Understanding the farming systems we work in and applying decision support tools, including models, is fundamental towards advancing the link between concepts and reality. There is an increased recognition that a ‘systems approaches’ are needed to meet the challenges presented by the highly heterogeneous and complex smallholder farming systems in Africa. Experimental approaches that are participatory in nature, are increasingly producing empirical evidence on the performance of agricultural intensification technologies with the most relevance to local farming communities. Effort must therefore be put to document the approaches, including the rich experiences in formats that can make replication across space more rapid. Overall we perceive the coupling of crop simulation modelling approaches to farming systems analysis as a viable vehicle to expedite knowledge accumulation, especially for complex environments.

The workshop will review current knowledge, provide an overview of scaling out approaches to support innovation. Faculty from Lilongwe University of Agriculture and Natural Resources (LUANR), University of Malawi, Malawi Extension and MSU’s Global Center for Food Systems Innovation will have the opportunity to discuss approaches to supporting farmer innovation around climate smart agriculture. The focus will be on the Africa RISING – Malawi approach, linking mother and baby participatory on-farm experimentation with modelling to support extension education and farmer innovation. Opportunities will be provided to review state of the art findings and to explore modelling approaches, and how to scale out participatory action research. Key objectives/questions to be addressed during the workshop include:

* Best bet options and technologies that support climate change adaptation and integrated sustainable intensification – review of findings from the region and case studies in Malawi
* Moving beyond the descriptive and exploratory phase - do we have enough technology packages that correspondingly respond/match the huge database/knowledge on farming systems across regions
* Summary vs detailed models: the debate between the complex and the practical -Capturing seasonal production variability and long term agroecology indicators e.g soil C
* What are the key tactical/practical planning and decisions facilitated through modeling that have been sufficiently successful in driving sustained agricultural intensification pathways and climate smart agriculture? (presentation of case studies) -
* Discuss and document approaches to scale out to larger inference zones and support innovation

**Draft program**

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|  | **Session** | **Organization** | **Presenter** |
| **Monday, Day 1** |  |  |  |
| **8:00** | **Morning: Chair -Dr Regis Chikowo**  Introductions and workshop objectives |  |  |
|  | Workshop opening | LUANAR VC | Prof Kanyama-Phiri |
|  | Africa RISING Program - overview | IITA | Prof Bekunda Mateete |
|  | Innovations in Climate Smart Ag overview: ICRAF's perspective | ICRAF | Dr. Issac Nyoka |
|  | Best bets in Malawi case study | LUANAR | Dr Wezi Mhango/ Prof. Kanyama-Phiri |
|  | Global Centre for Food Systems Innovation (GCFSI) | MSU | Prof. Ajit Srivastava |
| **14:00** | **Afternoon: Chair -Prof Mateete**  Overview of Africa RISING-Malawi  Introduction  **Project update**  The Approach - stimulating farmer innovation through PAR  Innovation among the Africa RISING farmers:    Observations from the field  View from Extension -DADOs  Africa RISING soil characterization  A taste of Africa RISING in West Africa | MSU  MSU  MSU  LUANAR  Malawi Extension  CIAT  IITA Ghana | Dr. Sieg Snapp  Dr. Regis Chikowo  Michelle Hockett  Edward Mzumara/ Isaac Jambo  Mrs Msukwa and  Mr Kumwenda  Dr.Desta Lusleged  Dr Asamoah Larbi |
| **Day 2** | **Adaptation to climate change and modelling**  **Dr.Wezi Mhango Chair** |  |  |
| 8:00 | Climate change and agriculture in Africa – Introduction and report on findings from GFSIC MT1 paper  Role of models  Basics of systems modelling to crop growth modelling  Mapping soil C in Malawi: C sequestration potential | MSU  MSU  MSU/IITA/UZ | Dr. Joe Messina  Dr. Nathan Moore  Dr. Regis Chikowo  Placid Mpeketula |
|  | **Afternoon:**  Reflection on best bet innovations for smallholder farmers in a changing climate  An example on action research on climate smart maize production in Zimbabwe  Group work: Participatory analysis exercises in small groups  - *questions to be provided*  **EVENING SESSION**  Hands-on experience with APSIM model (The Agricultural Production Systems Simulator Model) | MSU  MSU | Dr. Sieg Snapp  Dr Regis Chikowo  Dr Regis Chikowo |
| **Day 3** | **Farming Systems Approaches** |  |  |
|  | Report back on small group work |  |  |
|  | Participatory action research - Soil Food and Healthy Communities experiences | NGO | Lizzie Shumba |
|  | Farmer evaluation of best bets: a reflection of community workshops | MSU | Alex Smith |
|  | Extension in a changing world | LUNAR | Dr Daimon Kambewa |
|  | ***Afternoon:***  ***Field trip to rice production areas/fishery industry on lake Malawi*** |  |  |
| **Day 4** | ***Morning session only*** |  |  |
|  | **Planning for Year 2** |  |  |
|  | * Gaps from Year 1 - taking our experiences into year 2 * expansion of action research sites * the Africa RISING Malawi livestock component -ICRAF * Local level processing of grain legumes - Bunda and Extension services * modelling and systems analysis activities on Africa RISING | MSU and Malawi team | Dr. Regis Chikowo |
|  | * Planning a regional agricultural systems workshop * Workshop Closing | MSU  Malawi Extension | Dr. Sieg Snapp |
|  | ***12:30 Lunch and depart*** |  |  |

Participatory exercise for reflecting on ‘best bet’ innovations for sustainable intensification

1. Break into small groups
   1. Identify ‘niches’ across the farm that are opportunities for sustainable intensification
   2. Brainstorm and prioritize which innovations are best bet options for each niche
   3. Discuss the key innovations identified for each niche in relationship to drivers of sustainable intensification and potential barriers
   4. Review the innovations in the context of a changing environment, first for climate change then for a changing market context
2. Report back
3. Synthesize